

REMARKS

I. STATUS OF THE CLAIMS

Claims 6-10, 16-27, and 32 are cancelled.

Claims 33-71 are added.

Claims 1-5 and 28-31 are amended.

Claims 1-5, 11-16, 28-31, and 33-71 are therefore pending and under consideration.

II. SPECIFICATION AND REJECTION OF CLAIMS 1-5 UNDER 35 U.S.C. § 112(1)

In items 1-3 of the Office Action, the Examiner states that 'Applicant use "means for" language is an apparent improper attempt to incorporate essential matter from non-patent literature. . . "Means for" language indicates that the material is to be found elsewhere. Applicant's have not indicated where the material is to be found.'

In response, the Applicant submits that the use of "means for" language is not an attempt to incorporate essential matter from another source. The Applicant can find no authority that states that using "means for" in the Specification indicates that the material is to be found elsewhere (besides the present Specification). If the Examiner is stating that "elsewhere" can include other parts of the Specification, the Applicant will point out which part of the Specification can be used.

On page 3, Item 5 of the Office Action, the Examiner states that, 'The "means for" claims have been interpreted as per In re Donaldson. The term "a calculating means for" has been interpreted as software programs.'

The Examiner's interpretation is generally correct. A calculating means refers to either software or a computer running the software.

For example, "a first calculating means 10" described throughout the Specification is illustrated in Figure 1A as a block with "first calculation" written inside it, and appears inside a bigger box labeled, "apparatus for calculating immunity from radiated electromagnetic field." Also, the first calculation 10 has an arrow from a data file 2 (using a cylinder which commonly represents a database) pointing to it, and then points to decomposing 11. Also note that output

device 3 in Figure 1A appears as a CRT terminal. Note the word "means" is not used in the Figures. Note that the Title of the present Application is, "Apparatus for Calculating . . . and Storage Medium Storing Programs Therefore." Thus, it is clear that the present invention is a computer running specially programmed software. It is common and well known in the art that patent applications represent software operations (or modules, subroutines) as blocks in Figures.

Therefore, the "first calculating means" represents a part of a software program running on an electronic computer. The "means" part does not incorporate by reference any essential matter not presented in the Specification. Please see the figures for illustrations of all of the "means" elements.

Thus, Applicant respectfully requests examination of the "first calculating means," "decomposing means," "second calculating means," "third calculating means," "fourth calculating means," "managing means," "first computing means," "second computing means," "executing means," "acquiring means," "calculating means," "setting means," and "alarm means" (and any other such element) in the manner described above.

If the Examiner prefers, the Applicant can amend the Specification to replace "means" from the Specification with an alternative term the Examiner finds acceptable.

Therefore, the Applicant now addresses the rejections in items 7-8 of claims 1-5 under 35 U.S.C. § 112, first paragraph. More particularly, the rejection rejects these claims because the Specification 'does not reasonably provide enablement for "means for calculating" or anything else which depends on "means for" language in the specification. The Specification does not enable any person skilled in the art to which it pertains or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The scope of enablement is only that which is expressly recited in the specifications. The extensive use of the "means for" language is an apparent attempt to incorporate by reference something that is not explained in the specification. Clarification is required."

Based on the above, the Applicant clarifies that there is no improper attempt to incorporate by reference something not explained in the specification. The use of the word "means" in the Specification should be interpreted as a software module or an apparatus running this software. There is no rule prohibiting the use of "means" in the specification. The Merriam-Webster Dictionary notes that "means" may be used to indicate "something useful or helpful to a desired end". The Applicant submits that no essential matter is left out of the Specification.

Therefore, withdrawal of the rejections is respectfully requested.

III. REJECTION OF CLAIMS 1, 3, 4, AND 28-31 UNDER 35 U.S.C. § 102

CLAIMS 1, 3, 4, AND 28-31

Claim 1, for example, recites a first calculating unit and a second calculating unit, compared by the rejection to col. 16, lines 20-37, and col. 17, lines 55-64, respectively. Claim 1's first calculating unit calculates "mutual impedance, as a common mutual impedance for the interior wave frequency, upper sideband frequency and lower sideband frequency". Furthermore, claim 1's second calculating unit uses the moment method "having the common mutual impedance calculated by the first calculating unit".

In contrast, Otsu uses a frequency sampling and polynomial approximation approach. Figure 24 of Otsu corresponds to the cited portion of Otsu's column 16. Figure 24 shows the flow of the "processing for calculating approximate expression" of the mutual impedance Z_{ij} described at col. 16, line 45. More specifically, at step 2 of Figure 24, some sampling frequencies are specified from the frequency range specified in step 1.

At step 3, one sampled frequency is selected from among the unprocessed sampling frequencies, and at step 4 the mutual impedance Z_{ij} (between elements i and j) with respect to the selected sampling frequency is calculated according to an accurate calculation method. This calculated value is stored in a working file 200. At step 3 of Otsu, when the frequency sampling selection is finished, at step 5 the mutual impedance Z_{ij} is approximated by the *polynomial equation* shown in col. 6, line 45.

In contrast to the present invention's current calculation with the moment method and the mutual impedance, Otsu uses harmonic current processing. Figure 25 corresponds to the cited portion of col. 17. Step 2 substitutes the selected frequency into the equation for approximating the impedance to obtain mutual impedance Z_{ij} (for the selected frequency)). Then, at step 3, the mutual impedance Z_{ij} is used to solve the simultaneous equations under the moment method shown in Figure 26. This is then used to find the currents I_1 to I_m flowing in each element (at the frequency selected in step 1). This is different than claim 1's calculation of electric current with the moment method using the common mutual impedance.

Claims 3, 4, and 28-31 recite similar features. Withdrawal of the rejection of claims 1, 3, 4, and 28-31 is respectfully requested.

CLAIMS 3, 4, 28, 30 AND 31

Claim 3, for example, recites that a third calculating unit calculates the electric currents by proportional operations by using the values of the two recited wave sources, and by using the "electric current calculated by the second calculating unit", which in turn uses simultaneous equations.

On the other hand, as cited by the Examiner, Otsu's proposed third calculating unit (col. 9, lines 48-53), shown in Figure 2, separates the wave source into three wave sources having different frequencies defined by the frequency of the carrier signal and the frequency of the modulated signal. Thus, Otsu's proposed third calculating unit calculates the current of the time domain flowing in each element, for each of the three wave sources separated by the above separating unit.

Claims 4, 28, 30 and 31 recite similar features. Withdrawal of the rejection of claims 3, 4, 28, 30 and 31 is further respectfully requested.

CLAIMS 4 AND 31

Claim 4, for example, recites a fourth calculating unit that calculates the electric currents by proportional operations using the electric current calculated by the third calculating unit and the values of the two wave sources. Otsu does not discuss or suggest this feature.

Claim 31 recites a similar feature. Withdrawal of the rejection of claims 4 and 31 is further respectfully requested.

IV. NEW CLAIMS

New claims 33, 34, and 35 recite features similar to, respectively, claims 1, 3, and 4, and are allowable for at least the reasons discussed above.

New claims 36, 37, and 38 recite features similar to, respectively, claims 1, 3, and 4, and are allowable for at least the reasons discussed above

New claims 40, 51, and 62 approximately correspond to claim 18. The first computing means, second computing means, and executing means approximately correspond to Figure 2 of the present invention.

V. OTHER DEPENDENT CLAIMS

The other dependent claims are allowable due at least to their dependence from allowable independent claims. These claims are also allowable due to their recitation of independently patentable features. For example, claim 42 recites solving "simultaneous equations under the moment method for one frequency among a carrier wave frequency, of upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the antenna". The prior art does not teach or suggest this feature. Allowance of the dependent claims is respectfully requested.

VI. CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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on 16 DEC, 2002
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Date: DEC 16, 2002

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please CANCEL claims 6-10, 16-27, and 32.

Please AMEND the claims in accordance with the following:

1. (ONCE AMENDED) An apparatus for calculating immunity from a radiated electromagnetic field which segments an antenna and electronic apparatus into elements, calculates a mutual impedance among elements, and solves simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source and an electric current flowing through the electronic apparatus so as to simulate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna, [provided with] comprising:

a first calculating [means for] unit setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency and at least one lower sideband frequency and calculating the mutual impedance, as a common mutual impedance for the interior wave frequency, upper sideband frequency and lower sideband frequency among elements at that representative frequency; and

a second calculating [means for] unit solving simultaneous equations under the moment method having the common mutual impedance calculated by the first calculation [means] unit for the carrier wave frequency, upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna.

2. (ONCE AMENDED) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 1, further [provided with] comprising:

a decomposing [means for] unit applying one of LU decomposition and LDU decomposition on a matrix of the common mutual impedance calculated by the first calculating [means] unit,

wherein the second calculating [means] unit solving the simultaneous equations under the moment method using the matrix of the common mutual impedances decomposed by the decomposing [means] unit.

3. (ONCE AMENDED) An apparatus for calculating immunity from a radiated electromagnetic field which segments an antenna and electronic apparatus into elements, calculates a mutual impedance among elements, and solves simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source and an electric current flowing through the electronic apparatus so as to simulate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna, [provided with] comprising:

a first calculating [means for] unit setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency and at least one lower sideband frequency and calculating the mutual impedance among elements at that representative frequency[.];

a second calculating [means for] unit solving simultaneous equations under the moment method having the mutual impedance calculated by the first calculating [means] unit, while ignoring a wave source of the electronic apparatus, for one of the carrier wave frequency, upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna[.]; and

a third calculating [means for] unit calculating the electric currents, other than the electric current calculated by the second calculating [means] unit, flowing through the electronic apparatus due to a radio wave radiated by an antenna, by proportional operations, by using the electric current calculated by the second calculating [means] unit and a value of a wave source of the antenna at the frequency, from among the carrier wave frequency, upper sideband frequency and lower sideband frequency, for which the second calculating unit calculated the above electric current and a value of a wave source of the antenna that the frequency other than the above frequency for which the second calculating unit calculated the above electric current.

4. (ONCE AMENDED) An apparatus for calculating immunity from a radiated electromagnetic field which segments an antenna and electronic apparatus into elements, calculates a mutual impedance among elements, and solves simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source and an electric current flowing through the electronic apparatus so as to simulate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna, [provided with] comprising:

a first calculating [means for] unit setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency and at least one lower sideband frequency and calculating the mutual impedance among elements at that representative frequency[.];

a second calculating [means for] unit solving simultaneous equations under the moment method having the mutual impedance calculated by the first calculating [means for] unit the one of the carrier wave frequency, upper sideband frequency and lower sideband frequency which overlaps a frequency, including a higher harmonic component, of a wave source of the electronic apparatus, to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna[.];

a third calculating [means for] unit solving the simultaneous equations under the moment method having the mutual impedance calculated by the first calculating [means] unit for one of the frequencies not used in the calculation by the second calculating [means] unit to calculate the electric current, other than the electric current calculated by the second calculating [means] unit, flowing through the electronic apparatus due to a radio wave radiated by an antenna, and

a fourth calculating [means for] unit calculating the electric current, other than the electric currents calculated by the second and third calculating [means] unit, flowing through the electronic apparatus due to a radio wave radiated by an antenna, by [a] proportional operations [operation], by using the electric current calculated by the third calculating [means] unit and a value of a wave source of the antenna at the frequency, from among the carrier wave frequency, upper sideband frequency and lower sideband frequency, for which the third calculating unit calculated the above electric current and a value of a wave source of the antenna at the frequency other than the above frequency for which the third calculating unit calculated the above electric current.

5. (ONCE AMENDED) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 4, further [provided with] comprising:

a decomposing [means for] unit applying one of LU decomposition and LDU decomposition on a matrix of the mutual impedance calculated by the first calculating [means] unit,

the second and third calculating [means] unit solving the simultaneous equations under the moment method using the matrix of mutual impedance decomposed by the decomposing [means] unit.

28. (ONCE AMENDED) A method for calculating immunity from a radiated electromagnetic field which segments an antenna and electronic apparatus into elements, calculates a mutual impedance among elements, and solves simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source and an electric current flowing through the elements so as to simulate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna, [including] comprising:

a first processing [step of] operation setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency and at least one lower sideband frequency and calculating the mutual impedance among elements at that representative frequency[.];

a second processing [step of] operation solving simultaneous equations under the moment method having the mutual impedance calculated at the first processing [step] operation, while ignoring a wave source of the electronic apparatus, for one of the carrier wave frequency, upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna[.]; and

a third processing [step of] operation calculating the electric currents, other than the electric current calculated at the second processing [step] operation, flowing through the electronic apparatus due to a radio wave radiated by an antenna, by proportional operations, by using the electric current calculated at the second processing [step] operation and a value of a wave source of the antenna at the frequency, from among the above carrier wave frequency, upper sideband frequency and lower sideband frequency, for which the above electric current was calculated at the second processing step and a value of a wave source of the antenna at the frequency other than the above frequency for which the above electric current was calculated at the second processing step.

29. (ONCE AMENDED) A program storage medium storing programs used for realization of an apparatus for calculating immunity from a radiated electromagnetic field which segments an antenna and electronic apparatus into elements, calculates a mutual impedance among elements, and solves simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source and an electric current flowing through the electronic apparatus so as to simulate the electric current flowing through the

electronic apparatus due to a radio wave radiated by an antenna, storing a program for executing by a computer:

a first calculation processing of setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency and at least one lower sideband frequency and calculating the mutual impedance , as a common mutual impedance for the carrier wave frequency, upper sideband frequency and lower sideband frequency, among elements at that representative frequency; and

a second calculation processing of solving simultaneous equations under the moment method having the mutual impedance calculated at the first calculation processing for the carrier wave frequency, upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna.

30. (ONCE AMENDED) A program storage medium storing programs used for realization of an apparatus for calculating immunity from a radiated electromagnetic field, which segments an antenna and electronic apparatus into elements, calculates a mutual impedance among elements, and solves simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source and an electric current flowing through the electronic apparatus so as to simulate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna, storing a program for executing by a computer:

a first calculation processing of setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency and at least one lower sideband frequency and calculating the mutual impedance among elements at that representative frequency[.];

a second calculation processing of solving simultaneous equations under the moment method having the mutual impedance calculated at the first calculation processing, while ignoring a wave source of the electronic apparatus, for one of the carrier wave frequency, upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the electronic apparatus due to the radio wave radiated by an antenna[.]; and

a third calculation processing of calculating the electric currents, other than the electric current calculated at the second calculation processing, flowing through the electronic apparatus due to a radio wave radiated by an antenna, by proportional operations, by using the electric

current calculated at the second calculation processing and a value of a wave source of the antenna at the frequency, from among the above carrier wave frequency, upper sideband frequency and lower sideband frequency, for which the above electric current was calculated at the second calculation processing and a value of a wave source of the antenna at the frequency other than the above frequency for which the above electric current was calculated at the second calculation processing.

31. (ONCE AMENDED) A program storage medium storing programs used for realization of an apparatus for calculating immunity from a radiated electromagnetic field which segments an antenna and electronic apparatus into elements, calculates a mutual impedance among elements, and solves simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source, and an electric current flowing through the electronic apparatus so as to simulate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna, storing a program for executing by a computer:

a first calculation processing of setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency, and at least one lower sideband frequency and calculating the mutual impedance among elements at that representative frequency[.];

a second calculation processing of solving simultaneous equations under the moment method having the mutual impedance calculated at the first calculation processing for the one of the carrier wave frequency, upper sideband frequency and lower sideband frequency which overlaps a frequency, including a higher harmonic component, of a wave source of the electronic apparatus, to calculate the electric current flowing through the electronic apparatus due to the radio wave radiated by an antenna[.];

a third calculation processing of solving the simultaneous equations under the moment method having the mutual impedance calculated at the first calculation processing for one of the frequencies not used at the second calculation processing to calculate the electric current, other than the electric current calculated at the second calculation processing, flowing through the electronic apparatus due to a radio wave radiated by an antenna[.]; and

a fourth calculation processing of calculating the electric current, other than the electric currents calculated at the second and third calculation processings, flowing through the electronic apparatus due to a radio wave radiated by an antenna, by a proportional operation, by

using the electric current calculated at the third calculation processing and a value of a wave source of the antenna at the frequency, from among the above carrier wave frequency, upper sideband frequency and lower sideband frequency, for which the above electric current was calculated at the third calculation processing and a value of a wave source of the antenna at the frequency other than the above frequency for which the above electric current was calculated at the third calculation processing.

33. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field which simulates an electric current flowing through an electronic apparatus due to a radio wave radiated by an antenna, comprising:

a managing means for managing antenna information for realizing a prescribed intensity of an electric field on the electronic apparatus;

an acquiring means for acquiring antenna information used for the simulation from the managing means when a request for simulation is issued;

a calculating means for segmenting the electronic apparatus and an antenna specified by the antenna information acquired by the acquiring means into elements, calculating a mutual impedance among elements, and solving simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source and an electric current flowing through the electronic apparatus so as to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna; and

the calculating means comprising:

a first calculating means for setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency and at least one lower sideband frequency and calculating the mutual impedance, as a common mutual impedance for the carrier wave frequency, upper sideband frequency and lower sideband frequency, among elements at that representative frequency, and

a second calculating means for solving simultaneous equations under the moment method having the common mutual impedance calculated by the first calculation means for the interior wave frequency, upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna.

34. (NEW) An apparatus for calculating immunity from a radiated electromagnetic

field which simulates an electric current flowing through an electronic apparatus due to a radio wave radiated by an antenna, comprising:

- a managing means for managing antenna information for realizing a prescribed intensity of an electric field on the electronic apparatus;

- an acquiring means for acquiring antenna information used for the simulation from the managing means when a request for simulation is issued;

- a calculating means for segmenting the electronic apparatus and an antenna specified by the antenna information acquired by the acquiring means into elements, calculating a mutual impedance among elements, and solving simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source and an electric current flowing through the electronic apparatus so as to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna; and

- the calculating means comprising:

- a first calculating means for setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency and at least one lower sideband frequency and calculating the mutual impedance, as a common mutual impedance for the carrier wave frequency, upper sideband frequency and lower sideband frequency, among elements at that representative frequency,

- a second calculating means for solving simultaneous equations under the moment method having the common mutual impedance calculated by the first calculation means for the interior wave frequency, upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna, and

- a third calculating means for calculating the electric currents, other than the electric current calculated by the second calculating means, flowing through the electronic apparatus due to a radio wave radiated by an antenna, by proportional operations, by using the electric current calculated by the second calculating means and a value of a wave source of the antenna at the frequency, from among the carrier wave frequency, upper sideband frequency and lower sideband frequency, for which the second calculating means calculated the above electric current and a value of a wave source of the antenna at the frequency other than the above frequency for which the second calculating means calculated the above electric current.

35. (NEW) An apparatus for calculating immunity from a radiated electromagnetic

field which simulates an electric current flowing through an electronic apparatus due to a radio wave radiated by an antenna, comprising:

- a managing means for managing antenna information for realizing a prescribed intensity of an electric field on the electronic apparatus;

- an acquiring means for acquiring antenna information used for the simulation from the managing means when a request for simulation is issued;

- a calculating means for segmenting the electronic apparatus and an antenna specified by the antenna information acquired by the acquiring means into elements, calculating a mutual impedance among elements, and solving simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source and an electric current flowing through the electronic apparatus so as to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna; and

- the calculating means comprising:

- a first calculating means for setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency and at least one lower sideband frequency and calculating the mutual impedance, as a common mutual impedance for the carrier wave frequency, upper sideband frequency and lower sideband frequency, among elements at that representative frequency,

- a second calculating means for solving simultaneous equations under the moment method having the common mutual impedance calculated by the first calculation means for the interior wave frequency, upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna,

- a third calculating means for calculating the electric currents, other than the electric current calculated by the second calculating means, flowing through the electronic apparatus due to a radio wave radiated by an antenna, by proportional operations, by using the electric current calculated by the second calculating means and a value of a wave source of the antenna at the frequency, from among the carrier wave frequency, upper sideband frequency and lower sideband frequency, for which the second calculating means calculated the above electric current and a value of a wave source of the antenna at the frequency other than the above frequency for which the second calculating means calculated the above electric current, and

- a fourth calculating means for calculating the electric currents, other than the electric currents calculated by the second and third calculating means, flowing through the electronic

apparatus due to a radio wave radiated by an antenna, by proportional operations, by using the electric current calculated by the third calculating means and a value of a wave source of the antenna at the frequency, from among the carrier wave frequency, upper sideband frequency and lower sideband frequency, for which the third calculating means calculated the above electric current and a value of a wave source of the antenna at the frequency other than the above frequency for which the third calculating means calculated the above the electric current.

36. (NEW) A storage storing information enabling a computing device to perform a process for calculating immunity of an electronic apparatus from a radiated electromagnetic field, the process comprising:

- a managing process managing antenna information for realizing a prescribed intensity of an electric field on the electronic apparatus;

- an acquiring process acquiring antenna information used for the simulation from the managing process when a request for simulation is issued;

- a calculating process segmenting the electronic apparatus and an antenna specified by the antenna information acquired by the acquiring process into elements, calculating a mutual impedance among elements, and solving simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source and an electric current flowing through the electronic apparatus so as to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna; and

- the calculating process comprising:

- a first calculating process for setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency and at least one lower sideband frequency and calculating the mutual impedance, as a common mutual impedance for the carrier wave frequency, upper sideband frequency and lower sideband frequency, among elements at that representative frequency, and

- a second calculating process for solving simultaneous equations under the moment method having the common mutual impedance calculated by the first calculation process for the interior wave frequency, upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna.

37. (NEW) A storage storing information enabling a computing device to perform a

process for calculating immunity of an electronic apparatus from a radiated electromagnetic field, the process comprising:

- a managing process managing antenna information for realizing a prescribed intensity of an electric field on the electronic apparatus;

- an acquiring process acquiring antenna information used for the simulation from the managing process when a request for simulation is issued;

- a calculating process segmenting the electronic apparatus and an antenna specified by the antenna information acquired by the acquiring process into elements, calculating a mutual impedance among elements, and solving simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source and an electric current flowing through the electronic apparatus so as to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna; and

- the calculating process comprising:

- a first calculating process setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency and at least one lower sideband frequency and calculating the mutual impedance, as a common mutual impedance for the carrier wave frequency, upper sideband frequency and lower sideband frequency, among elements at that representative frequency,

- a second calculating process solving simultaneous equations under the moment method having the common mutual impedance calculated by the first calculation process for the carrier wave frequency, upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna, and

- a third calculating process calculating the electric currents, other than the electric current calculated by the second calculating means, flowing through the electronic apparatus due to a radio wave radiated by an antenna, by proportional operations, by using the electric current calculated by the second calculating means and a value of a wave source of the antenna at the frequency, from among the carrier wave frequency, upper sideband frequency and lower sideband frequency, for which the second calculating means calculated the above electric current and a value of a wave source of the antenna at the frequency other than the above frequency for which the second calculating means calculated the above electric current.

38. (NEW) A storage storing information enabling a computing device to perform a

process for calculating immunity of an electronic apparatus from a radiated electromagnetic field, the process comprising:

- a managing process managing antenna information for realizing a prescribed intensity of an electric field on the electronic apparatus;

- an acquiring process acquiring antenna information used for the simulation from the managing process when a request for simulation is issued;

- a calculating process segmenting the electronic apparatus and an antenna specified by the antenna information acquired by the acquiring process into elements, calculating a mutual impedance among elements, and solving simultaneous equations under the moment method defining a relationship among the mutual impedance, a wave source and an electric current flowing through the electronic apparatus so as to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna; and

- the calculating process comprising:

- a first calculating process setting a representative frequency with respect to a carrier wave frequency, at least one upper sideband frequency and at least one lower sideband frequency and calculating the mutual impedance, as a common mutual impedance for the carrier wave frequency, upper sideband frequency and lower sideband frequency, among elements at that representative frequency,

- a second calculating process solving simultaneous equations under the moment method having the common mutual impedance calculated by the first calculation process for the interior wave frequency, upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the electronic apparatus due to a radio wave radiated by an antenna,

- a third calculating process calculating the electric currents, other than the electric current calculated by the second calculating means, flowing through the electronic apparatus due to a radio wave radiated by an antenna, by proportional operations, by using the electric current calculated by the second calculating means and a value of a wave source of the antenna at the frequency, from among the carrier wave frequency, upper sideband frequency and lower sideband frequency, for which the second calculating means calculated the above electric current and a value of a wave source of the antenna at the frequency other than the above frequency for which the second calculating means calculated the above electric current, and

- a fourth calculating process calculating the electric currents, other than the electric currents calculated by the second and third calculating process, flowing through the electronic

apparatus due to a radio wave radiated by an antenna, by proportional operations, by using the electric current calculated by the third calculating process and a value of a wave source of the antenna at the frequency, from among the carrier wave frequency, upper sideband frequency and lower sideband frequency, for which the third calculating process calculated the above electric current and a value of a wave source of the antenna at the frequency other than the above frequency for which the third calculating process calculated the above the electric current.

39. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 33, further comprising:

a setting means for setting a threshold voltage for a position between specified conductor elements; and

an alarm means for comparing a voltage generated and a specified position between conductor elements, derived by making the voltage generated across a resistor, virtually inserted between the conductors, one obtained if the resistor has an infinitely large resistance, and the threshold voltage set by the setting means and outputting information on whether said voltage exceeds said threshold voltage or not.

40. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 33, further comprising:

a first computing means for assuming a state where there is no electronic apparatus, segmenting the antenna to be registered in the managing means into elements, calculating the mutual impedance among these elements, and solving the simultaneous equations under the moment method defining the relationship among the calculated mutual impedance, wave source of the antenna, and an electric current flowing through the elements so as to calculate the electric current flowing through these antenna elements;

a second computing means for calculating the intensity of the electric fields which the electric current calculated by the first calculating means causes in the electronic apparatus at different locations of installation; and

an executing means for changing the distance between the antenna and electronic apparatus and the value of the wave source of the antenna to determine the specific distance and value of the wave source giving the prescribed intensity of electric field calculated by the second calculating means and registering the thus prescribed antenna information in the managing means.

41. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 39, further comprising:

a first computing means for assuming a state where there is no electronic apparatus, segmenting the antenna to be registered in the managing means into elements, calculating the mutual impedance among these elements, and solving the simultaneous equations under the moment method defining the relationship among the calculated mutual impedance, wave source of the antenna, and an electric current flowing through the elements so as to calculate the electric current flowing through these antenna elements;

a second computing means for calculating the intensity of the electric fields which the electric current calculated by the first calculating means causes in the electronic apparatus at different locations of installation; and

an executing means for changing the distance between the antenna and electronic apparatus and the value of the weight source of the antenna to determine the specific distance and value of the weight source giving the prescribed intensity of electric field calculated by the second calculating means and registering the thus prescribed antenna information in the managing means.

42. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 40, wherein

said first calculating means solves the simultaneous equations under the moment method for one frequency among a carrier wave frequency, of upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the antenna.

43. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 33, wherein

said first calculating means solves the simultaneous equations under the moment method for one frequency among a carrier wave frequency, of upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the antenna.

44. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 33, wherein when considering a dielectric, a mutual admittance and a mutual reaction among the elements at the representative frequency are calculated in addition to

the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

45. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 39, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

46. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 40, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

47. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 41, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

48. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 42, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

49. (NEW) An apparatus for calculating immunity from a radiated electromagnetic

field as set forth in claim 43, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

50. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 34, further comprising:

a setting means for setting a threshold voltage for a position between specified conductor elements; and

an alarm means for comparing a voltage generated and a specified position between conductor elements, derived by making the voltage generated across a resistor, virtually inserted between the conductors, one obtained if the resistor has an infinitely large resistance, and the threshold voltage set by the setting means and outputting information on whether said voltage exceeds said threshold voltage or not.

51. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 34, further comprising:

a first computing means for assuming a state where there is no electronic apparatus, segmenting the antenna to be registered in the managing means into elements, calculating the mutual impedance among these elements, and solving the simultaneous equations under the moment method defining the relationship among the calculated mutual impedance, wave source of the antenna, and an electric current flowing through the elements so as to calculate the electric current flowing through these antenna elements;

a second computing means for calculating the intensity of the electric fields which the electric current calculated by the first calculating means causes in the electronic apparatus at different locations of installation; and

an executing means for changing the distance between the antenna and electronic apparatus and the value of the weight source of the antenna to determine the specific distance and value of the weight source giving the prescribed intensity of electric field calculated by the second calculating means and registering the thus prescribed antenna information in the managing means.

52. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 50, further comprising:

a first computing means for assuming a state where there is no electronic apparatus, segmenting the antenna to be registered in the managing means into elements, calculating the mutual impedance among these elements, and solving the simultaneous equations under the moment method defining the relationship among the calculated mutual impedance, wave source of the antenna, and an electric current flowing through the elements so as to calculate the electric current flowing through these antenna elements;

a second computing means for calculating the intensity of the electric fields which the electric current calculated by the first calculating means causes in the electronic apparatus at different locations of installation; and

an executing means for changing the distance between the antenna and electronic apparatus and the value of the weight source of the antenna to determine the specific distance and value of the weight source giving the prescribed intensity of electric field calculated by the second calculating means and registering the thus prescribed antenna information in the managing means.

53. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 51, wherein

said first calculating means solves the simultaneous equations under the moment method for one frequency among a carrier wave frequency, of upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the antenna.

54. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 52, wherein

said first calculating means solves the simultaneous equations under the moment method for one frequency among a carrier wave frequency, of upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the antenna.

55. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 34, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations

under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

56. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 50, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

57. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 51, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

58. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 52, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

59. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 53, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

60. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 54, wherein when considering a dielectric, a mutual admitting this and a

mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

61. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 35, further comprising:

a setting means for setting a threshold voltage for a position between specified conductor elements; and

an alarm means for comparing a voltage generated and a specified position between conductor elements, derived by making the voltage generated across a resistor, virtually inserted between the conductors, one obtained if the resistor has an infinitely large resistance, and the threshold voltage set by the setting means and outputting information on whether said voltage exceeds said threshold voltage or not.

62. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 35, further comprising:

a first computing means for assuming a state where there is no electronic apparatus, segmenting the antenna to be registered in the managing means into elements, calculating the mutual impedance among these elements, and solving the simultaneous equations under the moment method defining the relationship among the calculated mutual impedance, wave source of the antenna, and an electric current flowing through the elements so as to calculate the electric current flowing through these antenna elements;

a second computing means for calculating the intensity of the electric fields which the electric current calculated by the first calculating means causes in the electronic apparatus at different locations of installation; and

an executing means for changing the distance between the antenna and electronic apparatus and the value of the weight source of the antenna to determine the specific distance and value of the weight source giving the prescribed intensity of electric field calculated by the second calculating means and registering the thus prescribed antenna information in the managing means.

63. (NEW) An apparatus for calculating immunity from a radiated electromagnetic

field as set forth in claim 61, further comprising:

a first computing means for assuming a state where there is no electronic apparatus, segmenting the antenna to be registered in the managing means into elements, calculating the mutual impedance among these elements, and solving the simultaneous equations under the moment method defining the relationship among the calculated mutual impedance, wave source of the antenna, and an electric current flowing through the elements so as to calculate the electric current flowing through these antenna elements;

a second computing means for calculating the intensity of the electric fields which the electric current calculated by the first calculating means causes in the electronic apparatus at different locations of installation; and

an executing means for changing the distance between the antenna and electronic apparatus and the value of the weight source of the antenna to determine the specific distance and value of the weight source giving the prescribed intensity of electric field calculated by the second calculating means and registering the thus prescribed antenna information in the managing means.

64. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 72, wherein

said first calculating means solves the simultaneous equations under the moment method for one frequency among a carrier wave frequency, of upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the antenna.

65. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 63, wherein

said first calculating means solves the simultaneous equations under the moment method for one frequency among a carrier wave frequency, of upper sideband frequency and lower sideband frequency to calculate the electric current flowing through the antenna.

66. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 35, wherein when considering a dielectric, a mutual admittance and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual

the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

admitting this and mutual reaction.

67. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 61, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

68. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 62, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

69. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 63, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

70. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 64, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to the mutual impedance and processing is performed in accordance with simultaneous equations under the moment method, considering a dielectric, having the mutual impedance, mutual admitting this and mutual reaction.

71. (NEW) An apparatus for calculating immunity from a radiated electromagnetic field as set forth in claim 65, wherein when considering a dielectric, a mutual admitting this and a mutual reaction among the elements at the representative frequency are calculated in addition to